

Fig. 1 Schematic of Zn(II) determination by fluorescence using apocarbonic anhydrase and Dapoxyl sulfonamide.

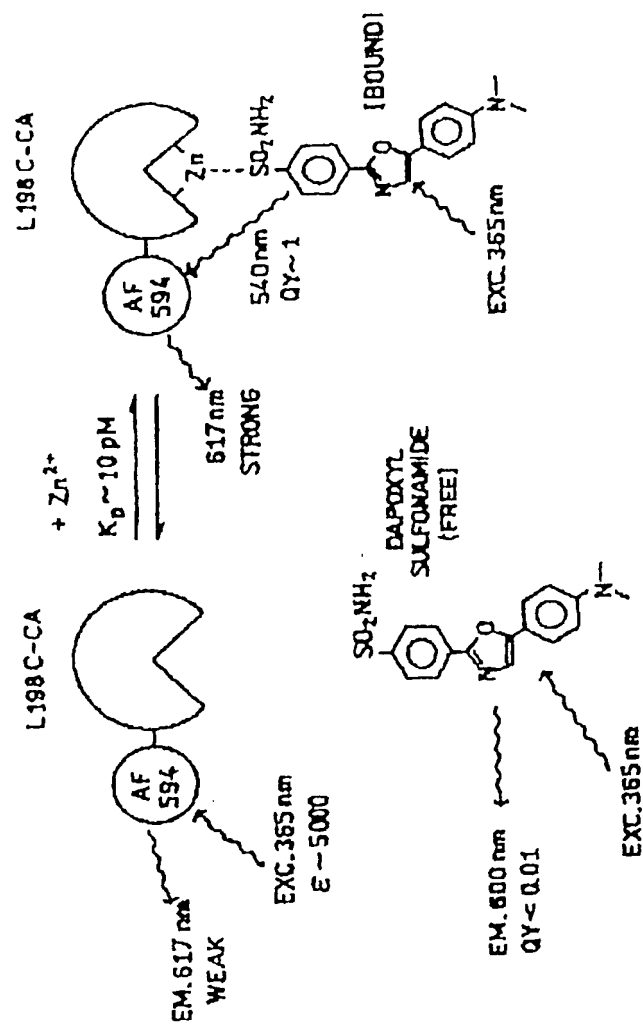


Fig. 2 Schematic of ratiometric determination of Zn(II) with apoL198C-Alexa Fluor 594 carbonic anhydrase and Dapoxyl sulfonamide.

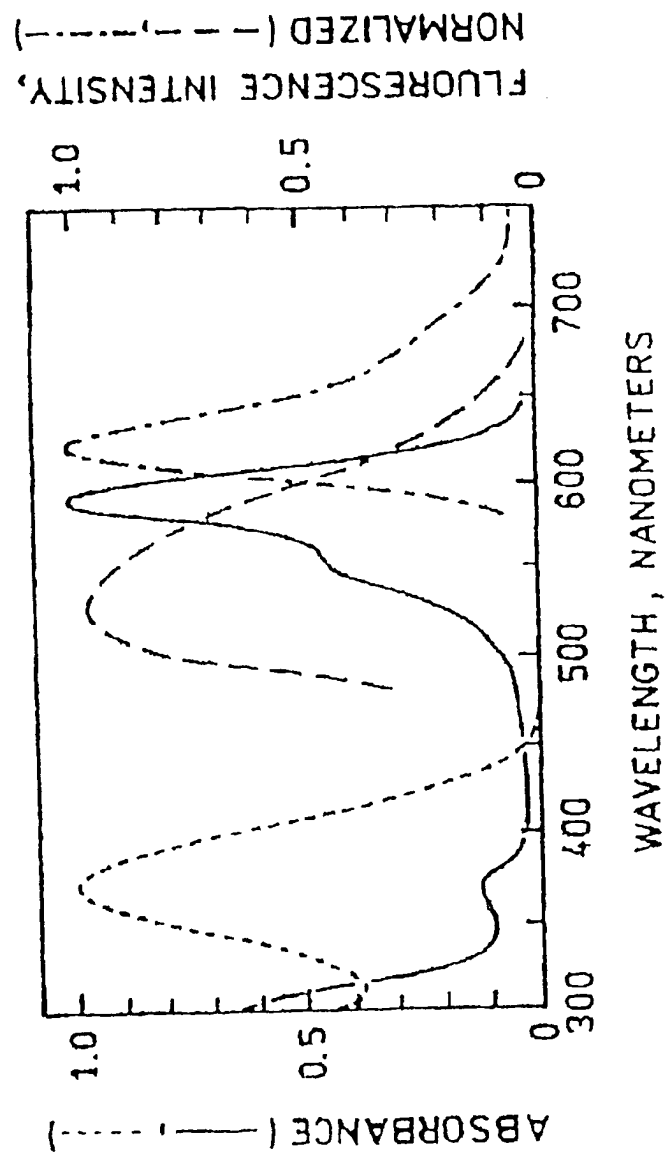


Fig. 3 Absorbance (—) and emission (---) spectra of apol198C-Alexa Fluor 594 apocaroonic anhydride, together with absorbance (—) and emission (---) spectra of Dapoxyl sulfonamide bound to holo carbonic anhydride.

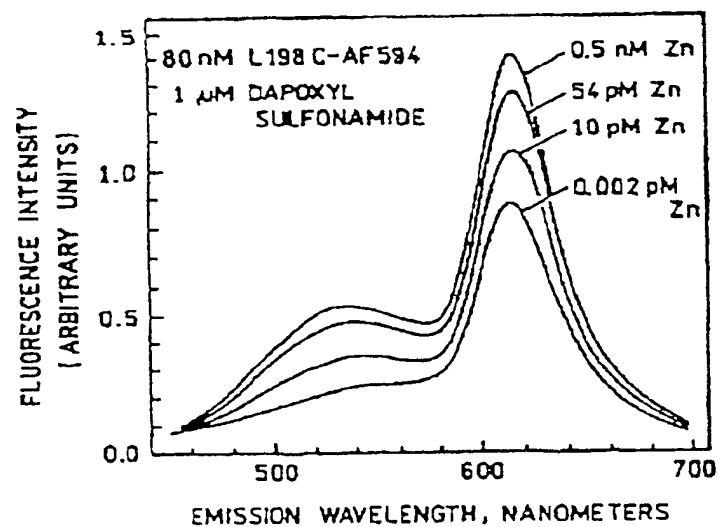


Fig. 4 Emission spectra of 80 nM apoL198C-Alexa Fluor 594 and 1  $\mu$ M Dapoxyl sulfonamide in the presence of solutions buffered at (in ascending order at 610 nm) 0.002, 10, 54, and 0.5 nM free Zn(II); excitation at 365 nm.

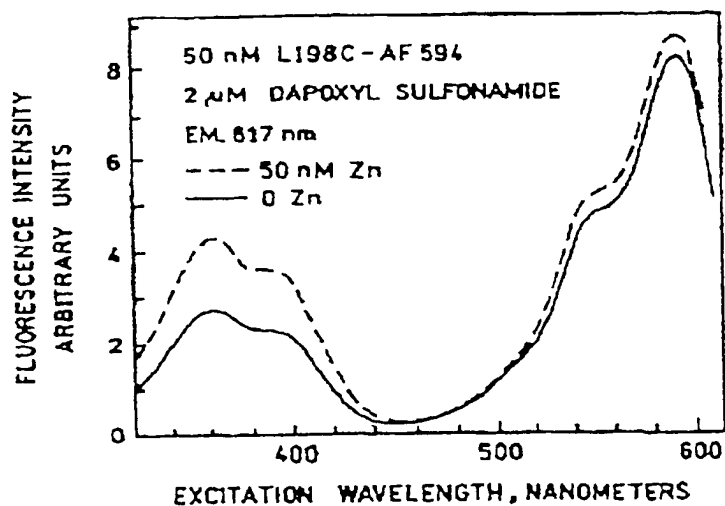


Fig. 5 Excitation spectra of 50 nM apoL198C-Alexa Fluor 594 and 2  $\mu$ M Dapoxyl sulfonamide in the absence (—) and presence of 50 nM free Zn(II) (---); emission at 617 nm.

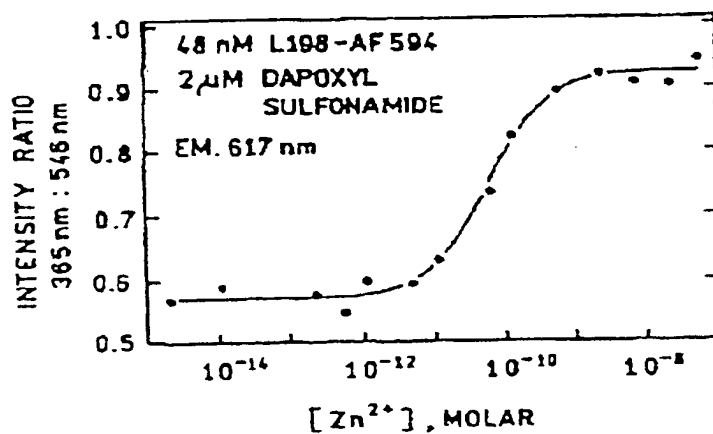


Fig. 6 Zinc-dependent ratio of emission at 617 nm excited at 365 nm to that excited at 548 nm of 48 nM apoL198C-Alexa Fluor 594 and Dapoxyl sulfonamide; the line is the best fit binding isotherm.

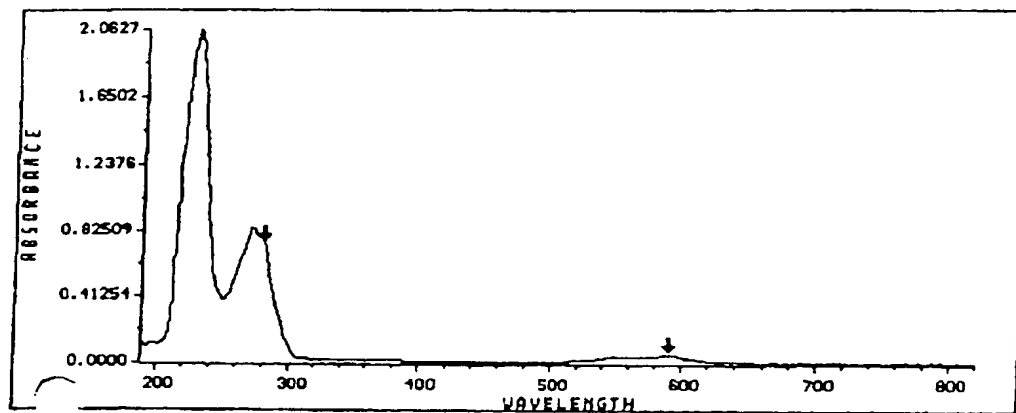


Figure 7.

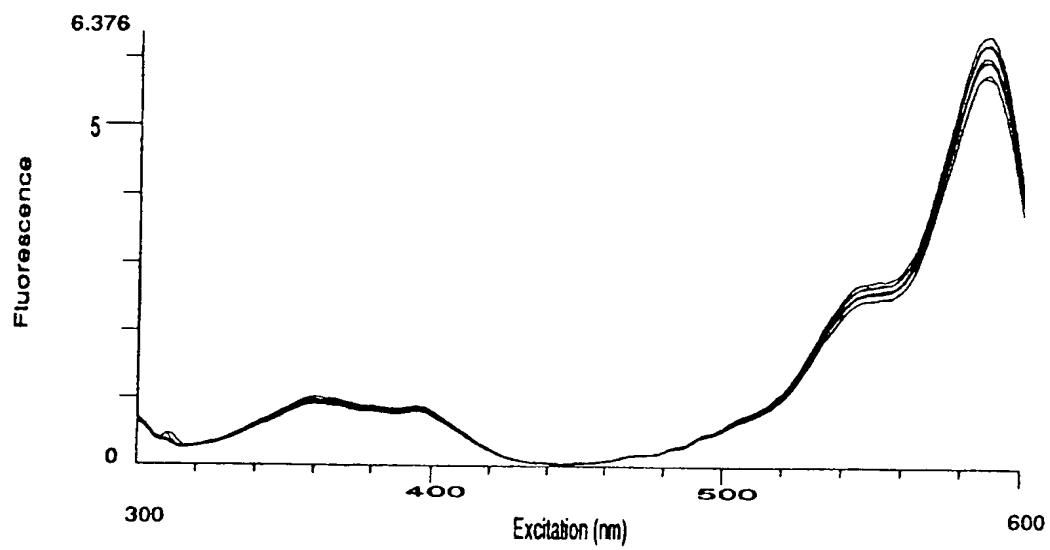


Figure 8.

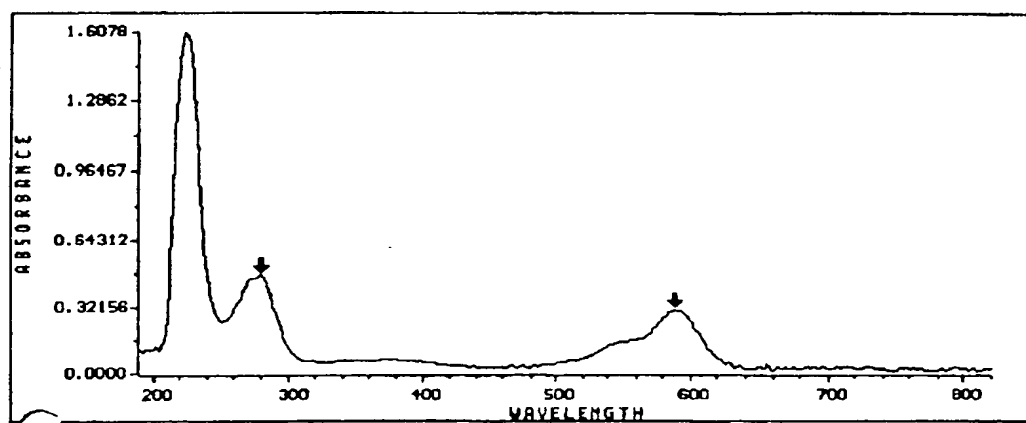


Figure 9.

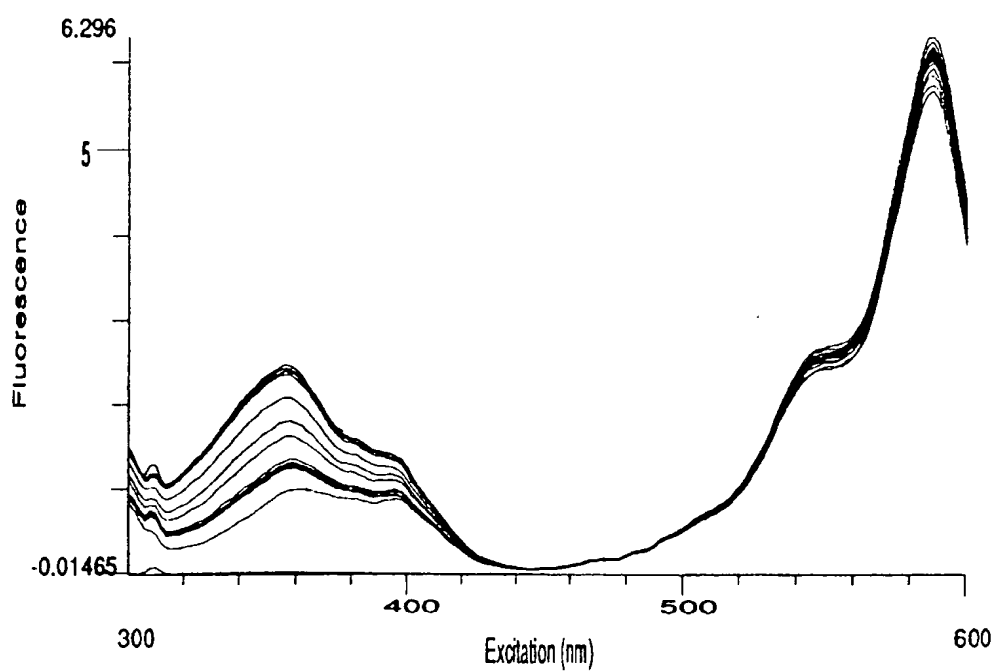


Figure 10.

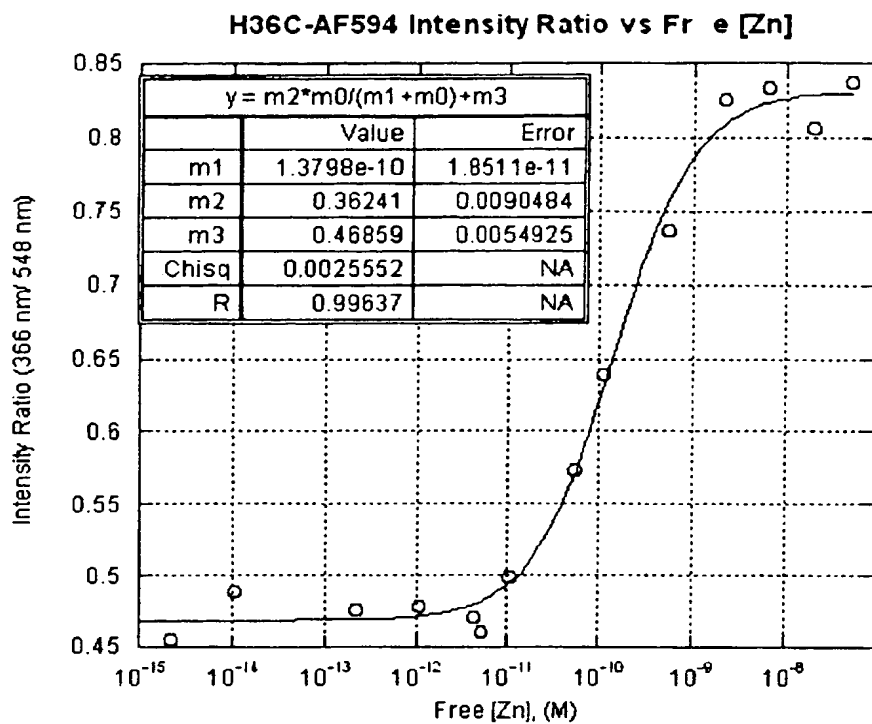


Figure 11.

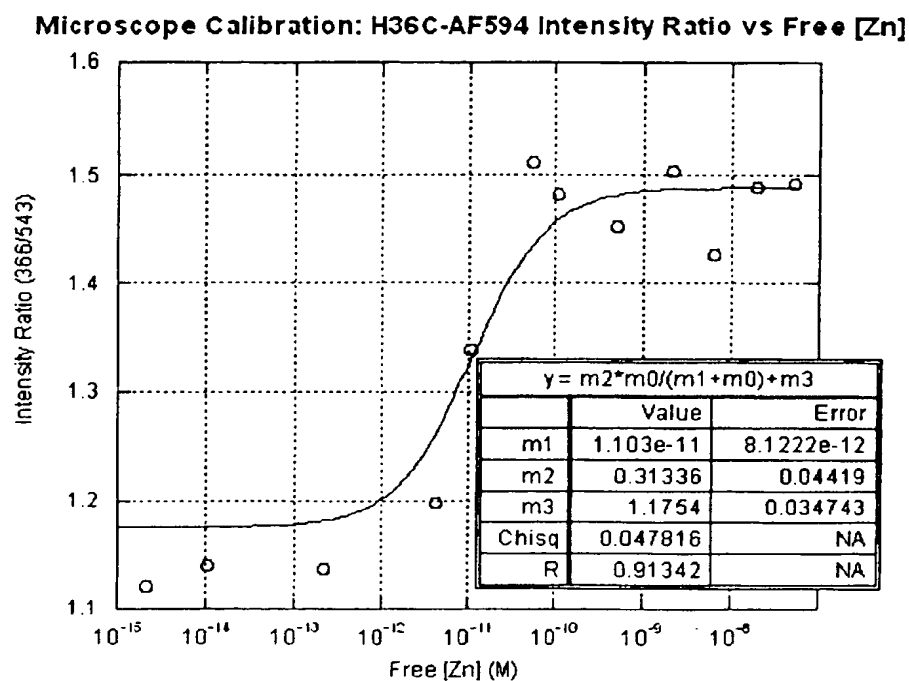


Figure 12.



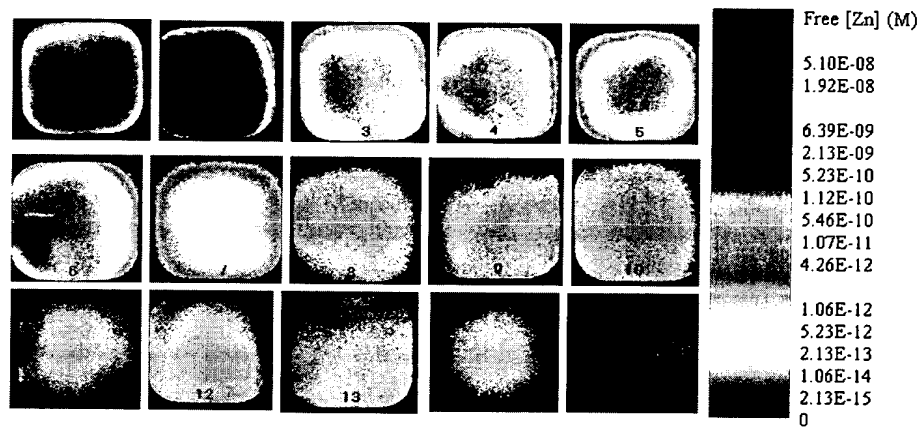


Figure 13.